

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- 1 1. (Currently amended) A method for facilitating instant failover during
2 data packet routing by employing a flooding protocol to send data packets
3 between a source and a destination, the method comprising:
4 receiving a data packet ~~containing data~~ at an intermediate node located
5 between the source and the destination, wherein the data packet is ~~a data packet~~
6 ~~that is enroute~~ from the source to the destination;
7 wherein the data packet is received from a first neighboring node;
8 determining whether the data packet has been seen before at the
9 intermediate node; and
10 if the data packet has not been seen before, forwarding the data packet to
11 neighboring nodes of the intermediate node.
- 1 2. (Currently amended) The method of claim 1, wherein forwarding the
2 data packet to neighboring nodes ~~needs~~ involves forwarding the data packet to all
3 neighboring nodes except the first neighboring node from which the data packet
4 was received.
- 1 3. (Currently amended) The method of claim 1, wherein determining
2 whether the data packet has been seen before involves examining a sequence
3 number, S_R , contained within the data packet to determine whether the sequence
4 number has been seen before.

1 4. (Currently amended) The method of claim 3, wherein the sequence
2 number includes one of:
3 a sequence number inserted into a payload of the data packet;
4 a sequence number located within an Internet Protocol (IP) header of the
5 data packet; and
6 a sequence number located within a layer 4 header of the data packet.

1 5. (Currently amended) The method of claim 3, wherein examining the
2 sequence number involves looking up a highest received sequence number, S_H ,
3 stored at the intermediate node based upon the source of the data packet.

1 6. (Currently amended) The method of claim 3, wherein examining the
2 sequence number involves looking up a highest received sequence number, S_H ,
3 stored at the intermediate node based upon the source and the destination of the
4 data packet.

1 7. (Currently amended) The method of claim 3, wherein determining
2 whether the data packet has been seen before involves examining a record, R ,
3 indicating which of N possible sequence numbers preceding a highest received
4 sequence number, S_H , have been seen before.

1 8. (Currently amended) The method of claim 3, wherein determining
2 whether the data packet has been seen before involves:
3 looking up a highest received sequence number, S_H ;
4 if $S_R > S_H$,
5 overwriting S_H with S_R ,
6 updating a record, R , indicating which of N possible
7 sequence numbers preceding S_H have been seen before, and

8 forwarding the data packet to the neighboring nodes;
9 if $S_H - N > S_R$, discarding the data packet; and
10 if $S_H \geq S_R \geq S_H - N$, then
11 if R indicates that S_R has been seen before, discarding the
12 data packet, and
13 if R indicates the data packet has not been seen before,
14 updating R to indicate that S_R has been seen,
15 and
16 forwarding the data packet to the
17 neighboring nodes.

1 9. (Original) The method of claim 8, wherein the record, R , is a bit vector
2 of size N .

1 10. (Currently amended) A computer-readable storage medium storing
2 instructions that when executed by a computer cause the computer to perform a
3 method for facilitating instant failover during data packet routing by employing a
4 flooding protocol to send data packets between a source and a destination, the
5 method comprising:
6 receiving a data packet ~~containing data~~ at an intermediate node located
7 between the source and the destination, wherein the data packet is a ~~data~~ packet
8 ~~that is enroute~~ from the source to the destination;
9 wherein the data packet is received from a first neighboring node;
10 determining whether the data packet has been seen before at the
11 intermediate node; and
12 if the data packet has not been seen before, forwarding the data packet to
13 neighboring nodes of the intermediate node.

1 11. (Currently amended) The computer-readable storage medium of claim
2 10, wherein forwarding the data packet to neighboring ~~nodes~~~~needs~~ involves
3 forwarding the data packet to all neighboring nodes except the first neighboring
4 node from which the data packet was received.

1 12. (Currently amended) The computer-readable storage medium of claim
2 10, wherein determining whether the data packet has been seen before involves
3 examining a sequence number, S_R , contained within the data packet to determine
4 whether the sequence number has been seen before.

1 13. (Currently amended) The computer-readable storage medium of claim
2 12, wherein the sequence number includes one of:
3 a sequence number inserted into a payload of the data packet;
4 a sequence number located within an Internet Protocol (IP) header of the
5 data packet; and
6 a sequence number located within a layer 4 header of the data packet.

1 14. (Currently amended) The computer-readable storage medium of claim
2 12, wherein examining the sequence number involves looking up a highest
3 received sequence number, S_H , stored at the intermediate node based upon the
4 source of the data packet.

1 15. (Currently amended) The computer-readable storage medium of claim
2 12, wherein examining the sequence number involves looking up a highest
3 received sequence number, S_H , stored at the intermediate node based upon the
4 source and the destination of the data packet.

1 16. (Currently amended) The computer-readable storage medium of claim
2 12, wherein determining whether the data packet has been seen before involves
3 examining a record, R , indicating which of N possible sequence numbers
4 preceding a highest received sequence number, S_H , have been seen before.

1 17. (Currently amended) The computer-readable storage medium of claim
2 12, wherein determining whether the data packet has been seen before involves:
3 looking up a highest received sequence number, S_H ;
4 if $S_R > S_H$,
5 overwriting S_H with S_R ,
6 updating a record, R , indicating which of N possible
7 sequence numbers preceding S_H have been seen before, and
8 forwarding the data packet to the neighboring nodes;
9 if $S_H - N > S_R$, discarding the data packet; and
10 if $S_H \geq S_R \geq S_H - N$, then
11 if R indicates that S_R has been seen before, discarding the
12 data packet, and
13 if R indicates the data packet has not been seen before,
14 updating R to indicate that S_R has been seen,
15 and
16 forwarding the data packet to the
17 neighboring nodes.

1 18. (Original) The computer-readable storage medium of claim 17,
2 wherein the record, R , is a bit vector of size N .

1 19. (Currently amended) An apparatus that facilitates instant failover
2 during data packet routing by employing a flooding protocol to send data packets
3 between a source and a destination, the apparatus comprising:
4 a receiving mechanism that is configured to receive a data packet
5 ~~containing data~~ at an intermediate node located between the source and the
6 destination, wherein the data packet is ~~a data packet that is enroute~~ from the
7 source to the destination;
8 wherein the data packet is received from a first neighboring node;
9 a determination mechanism that is configured to determine whether the
10 data packet has been seen before at the intermediate node; and
11 a forwarding mechanism that is configured to forward the data packet to
12 neighboring nodes of the intermediate node if the data packet has not been seen
13 before.

1 20. (Currently amended) The apparatus of claim 19, wherein the
2 forwarding mechanism is configured to forward the data packet to all neighboring
3 nodes except the first neighboring node from which the data packet was received.

1 21. (Currently amended) The apparatus of claim 19, wherein the
2 determination mechanism is configured to examine a sequence number, S_R ,
3 contained within the data packet to determine whether the sequence number has
4 been seen before.

1 22. (Currently amended) The apparatus of claim 21, wherein the sequence
2 number includes one of:
3 a sequence number inserted into a payload of the data packet;
4 a sequence number located within an Internet Protocol (IP) header of the
5 data packet; and

6 a sequence number located within a layer 4 header of the data packet.

1 23. (Currently amended) The apparatus of claim 21, wherein the
2 determination mechanism is configured to look up a highest received sequence
3 number, S_H , stored at the intermediate node based upon the source of the data
4 packet.

1 24. (Currently amended) The apparatus of claim 21, wherein the
2 determination mechanism is configured to look up a highest received sequence
3 number, S_H , stored at the intermediate node based upon the source and the
4 destination of the data packet.

1 25. (Currently amended) The apparatus of claim 21, wherein the
2 determination mechanism is configured to examine a record, R , indicating which
3 of N possible sequence numbers preceding a highest received sequence number,
4 S_H , have been seen before.

1 26. (Currently amended) The apparatus of claim 21, wherein the
2 determination mechanism is configured to:
3 look up a highest received sequence number, S_H ;
4 if $S_R > S_H$, to
5 overwrite S_H with S_R ,
6 update a record, R , indicating which of N possible sequence
7 numbers preceding S_H have been seen before, and to
8 forward the data packet to the neighboring nodes;
9 if $S_H - N > S_R$, to discard the data packet; and
10 if $S_H \geq S_R \geq S_H - N$, to

11 discard the data packet, if R indicates that S_R has been seen
12 before, and to
13 update R to indicate that S_R has been seen, and to forward
14 the data packet to the neighboring nodes, if R indicates the data
15 packet has not been seen before.

1 27. (Original) The apparatus of claim 26, wherein the record, R , is a bit
2 vector of size N .